

#### Absolute maximum ratings

( $T_a=25^\circ\text{C}$ )

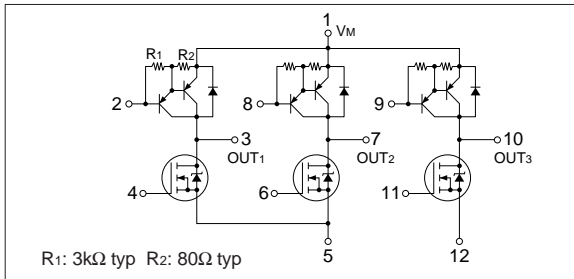
Symbol	Ratings	Unit
$V_M$	100	V
$I_o$	$\pm 6$ (PW $\leq$ 100ms)	A
$I_{oP}$	$\pm 8$ (PW $\leq$ 1ms)	A
$V_{GS}$	$\pm 10$	V
$I_B$	-0.5	A
$P_T$	5 ( $T_a=25^\circ\text{C}$ )	W
	35 ( $T_c=25^\circ\text{C}$ )	
$\theta_{j-a}$	25	$^\circ\text{C}/\text{W}$
$\theta_{j-c}$	3.57	$^\circ\text{C}/\text{W}$
$V_{ISO}$	1000 (Between fin and lead pin, AC)	V <sub>rms</sub>
$T_j$	150	$^\circ\text{C}$
$T_{stg}$	-40 to +150	$^\circ\text{C}$

#### Electrical characteristics (Sink: N-channel MOSFET)

( $T_a=25^\circ\text{C}$ )

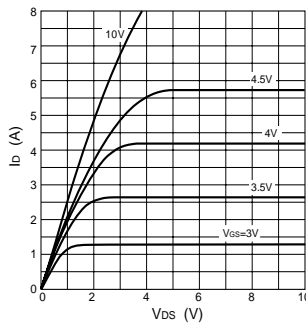
Symbol	Specification			Unit	Conditions
	min	typ	max		
$V_{(BR)DSS}$	100			V	$I_D=250\mu\text{A}$ , $V_{GS}=0\text{V}$
$I_{GSS}$			$\pm 500$	nA	$V_{GS}=\pm 10\text{V}$
$I_{DSS}$			250	$\mu\text{A}$	$V_{DS}=100\text{V}$ , $V_{GS}=0\text{V}$
$V_{TH}$	1.0		2.0	V	$V_{DS}=10\text{V}$ , $I_D=250\mu\text{A}$
$Re(y_{fs})$	1.1	1.7		S	$V_{DS}=10\text{V}$ , $I_D=4\text{A}$
$R_{DS(ON)}$		0.47	0.55	$\Omega$	$V_{GS}=10\text{V}$ , $I_D=2\text{A}$
		0.60	0.78		$V_{GS}=4\text{V}$ , $I_D=2\text{A}$
$C_{iss}$		230		pF	$V_{DS}=25\text{V}$ , $f=1.0\text{MHz}$ , $V_{GS}=0\text{V}$
$C_{oss}$		60		pF	$V_{GS}=0\text{V}$
$t_{on}$		60		ns	$I_D=4\text{A}$ , $V_{DD}=50\text{V}$ , $V_{GS}=10\text{V}$
$t_{off}$		50		ns	$V_{GS}=10\text{V}$
$V_{SD}$		1.2	2.0	V	$I_{SD}=4\text{A}$ , $V_{GS}=0\text{V}$
$t_{rr}$		250		ns	$I_F=\pm 100\text{mA}$

#### Equivalent circuit diagram

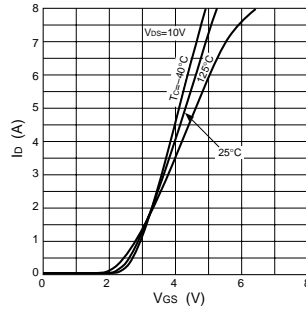


#### Characteristic curves (N-channel)

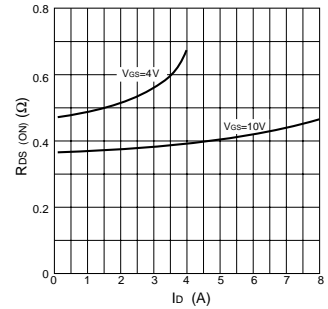
$V_{DS}-I_D$  Characteristics (Typical)



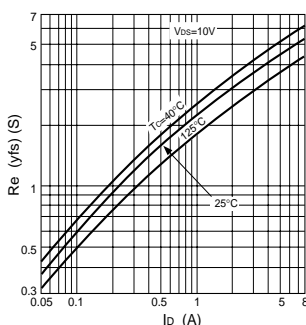
$V_{GS}-I_D$  Temperature Characteristics (Typical)



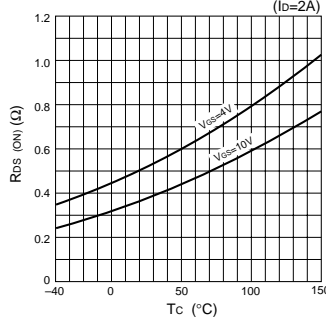
$I_{DS}-R_{DS(ON)}$  Characteristics (Typical)



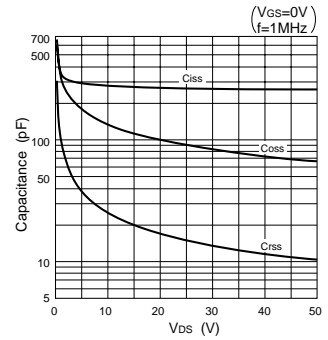
$I_D-Re(y_{fs})$  Temperature Characteristics (Typical)



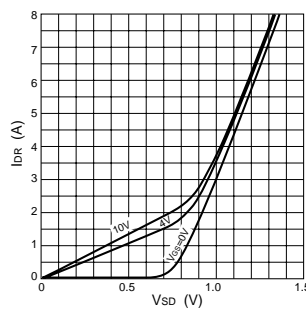
$T_c-R_{DS(ON)}$  Characteristics (Typical)



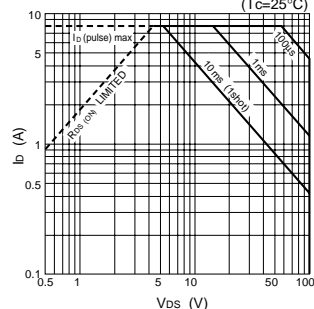
$V_{DS}-C_{pacitance}$  Characteristics (Typical)



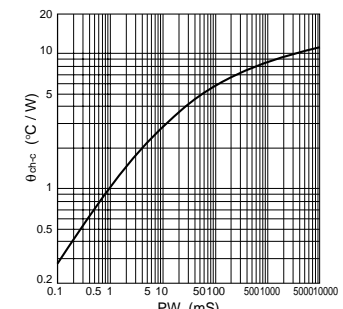
$V_{SD}-I_{DR}$  Characteristics (Typical)



Safe Operating Area (SOA)



$\theta_{ch-c}-PW$  Characteristics

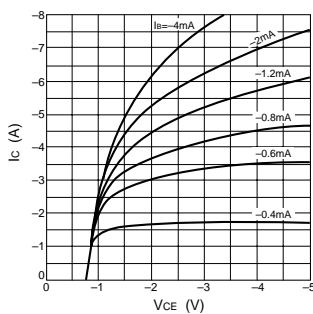


## Electrical characteristics (Source: PNP transistor) ( $T_a=25^\circ\text{C}$ )

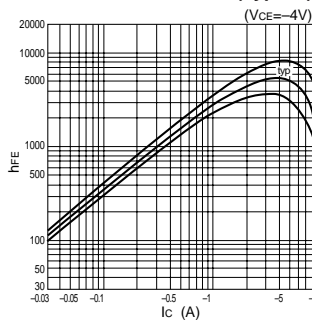
Symbol	Specification			Unit	Conditions
	min	typ	max		
$I_{CBO}$			-10	$\mu\text{A}$	$V_{CB}=-100\text{V}$
$I_{EBO}$			-10	$\text{mA}$	$V_{EB}=-6\text{V}$
$V_{CEO}$	-100			$\text{V}$	$I_C=-10\text{mA}$
$h_{FE}$	2000	5000	12000		$V_{CE}=-4\text{V}$ , $I_C=-3\text{A}$
$V_{CE(sat)}$			-1.5	$\text{V}$	$I_C=-3\text{A}$ , $I_B=-6\text{mA}$
$V_{BE(sat)}$			-2.2	$\text{V}$	
$V_{FEC}$			1.3	$\text{V}$	$I_{FEC}=-1\text{A}$
$t_{rr}$		2.0		$\mu\text{s}$	$I_F=\pm 100\text{mA}$
$t_{on}$		0.6		$\mu\text{s}$	$V_{CC}=-30\text{V}$
$t_{stg}$		1.6		$\mu\text{s}$	$I_C=-3\text{A}$
$t_f$		0.5		$\mu\text{s}$	$I_{B1}=-I_{B2}=-6\text{mA}$
$f_T$		90		$\text{MHz}$	$V_{CE}=-12\text{V}$ , $I_E=1\text{A}$
$C_{ob}$		100		$\text{pF}$	$V_{CB}=-10\text{V}$ , $f=1\text{MHz}$

## Characteristic curves (PNP)

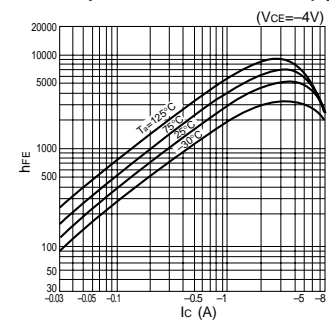
**$I_C$ - $V_{CE}$  Characteristics (Typical)**



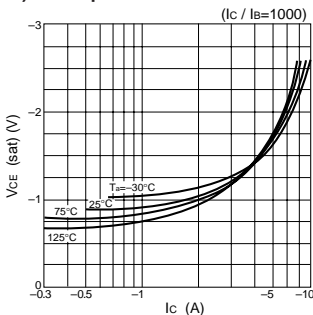
**$h_{FE}$ - $I_C$  Characteristics (Typical)**



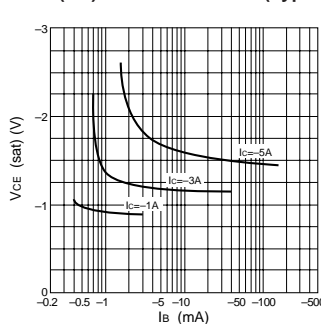
**$h_{FE}$ - $I_C$  Temperature Characteristics (Typical)**



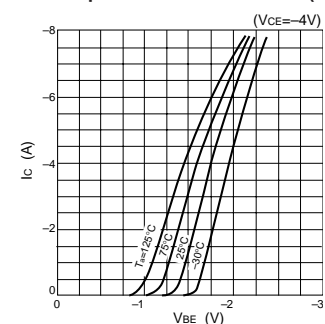
**$V_{CE(sat)}$ - $I_C$  Temperature Characteristics (Typical)**



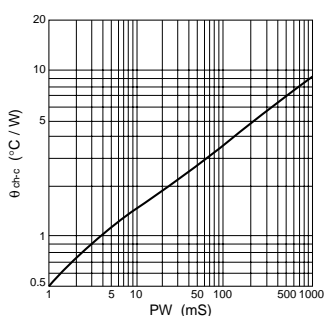
**$V_{CE(sat)}$ - $I_B$  Characteristics (Typical)**



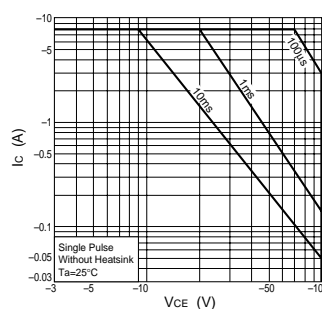
**$I_C$ - $V_{BE}$  Temperature Characteristics (Typical)**



**$\theta_{J-a}$ -PW Characteristics**



**Safe Operating Area (SOA)**



**$P_T$ - $T_a$  Characteristics**

