

QSH29

- 1) Low collector saturation voltage, typically
 $V_{CE(sat)} = 100\text{mV}$ for $I_C / I_B = 100\text{mA} / 1\text{mA}$ (Typ.)
- 2) High current gain, minimum
 $h_{FE} = 500$ for $V_{CE} = 5\text{V}$, $I_C = 200\text{mA}$.
- 3) Built in Zener diode for protection against surges when connected to inductive load.

NPN silicon epitaxial planar transistor

Driver

Type	Package	TSMT6
	Packaging type	Taping
	Code	TR
	Basic ordering unit (pieces)	3000
QSH29		○

Technical drawing of the TSMT6 component showing top and side views with dimensions.

Top View Dimensions:

- Overall width: 2.9
- Overall height: 1.9
- Internal width segments: 0.95, 0.95
- Internal height segments: 1.6, 0.3
- Pin (1) width: 0.4
- Pin (2) width: 0.4
- Pin (3) width: 0.4
- Pin (4) width: 0.4
- Pin (5) width: 0.4
- Pin (6) width: 0.4

Side View Dimensions:

- Overall height: 1.0
- Top flange height: 0.85
- Top flange width: 0.7
- Bottom flange height: 0.16
- Bottom flange width: 0.3-0.6
- Bottom flange thickness: 0-0.1

Abbreviated symbol : H29

$R=10k\Omega$

(1) : Emitter (DTr1)
(2) : Base (DTr1)
(3) : Collector (DTr2)
(4) : Emitter (DTr2)
(5) : Base (DTr2)
(6) : Collector (DTr1)

*2 Each terminal mounted on a ceramic board

Transistor

●Electrical characteristics (Ta=25°C)

<< DTr1 >> << DTr2 >>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	50	–	70	V	$I_C=50\mu A$
Collector-base breakdown voltage	BV_{CBO}	50	–	70	V	$I_C=50\mu A$
Emitter-base breakdown voltage	BV_{EBO}	5.0	–	–	V	$I_E=720\mu A$
Collector cut-off current	I_{CBO}	–	–	0.5	μA	$V_{CB}=40V$
Emitter cut-off current	I_{EBO}	300	–	580	μA	$V_{EB}=4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	100	300	mV	$I_C=100mA, I_B=1mA$
DC current gain	h_{FE}	500	–	–	–	$V_{CE}=5V, I_C=200mA$
Emitter-base resistance	R	7	10	13	k Ω	–

Transistor

●Electrical characteristic curves

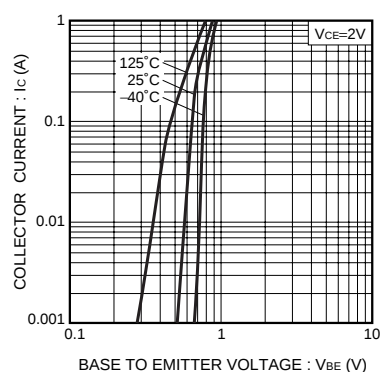


Fig.1 Grounded Emitter Propagation Characteristics

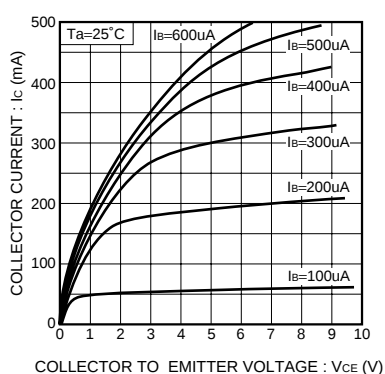


Fig.2 Typical Output Characteristics

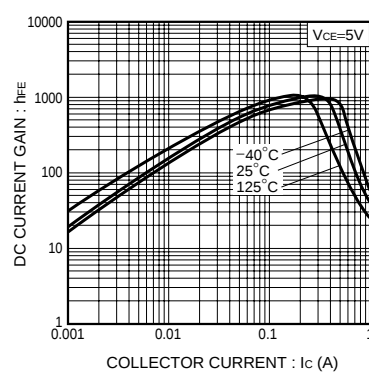


Fig.3 DC Current Gain vs. Collector Current

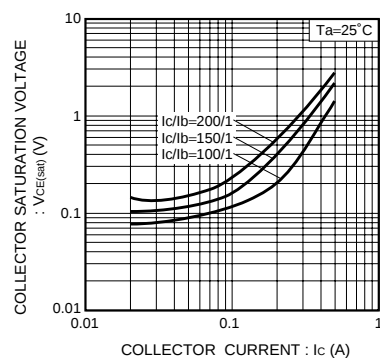


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (I)

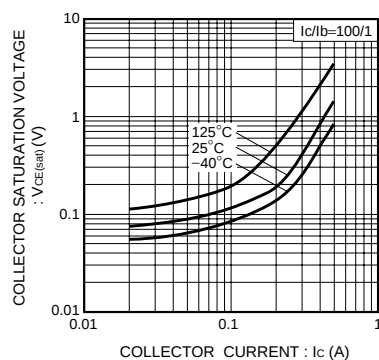


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (II)

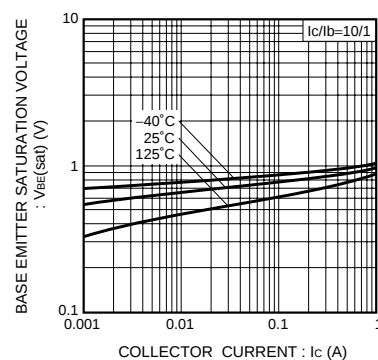


Fig.6 Base-emitter Saturation Voltage vs. Collector Current

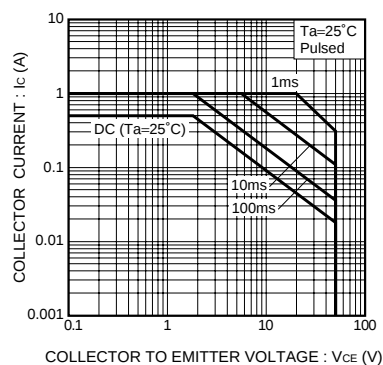


Fig.7 Safe Operating Area

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