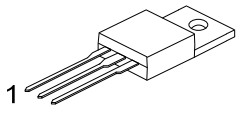
UG25N45 **Preliminary** ***NPN SILICON TRANSISTOR***

N-CHANNEL INSULATED GATE BIPOLAR TRANSISTOR



TO-220

Lead-free: UG25N45L
Halogen-free: UG25N45G

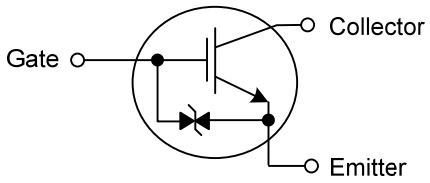
■ DESCRIPTION

UTC **UG25N45** is an N-channel NPN transistor. It can be used in strobe flash applications

■ FEATURES

* Very high input impedance
* Very high pick current capability
* Gate drive: 4.5V

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
UG25N45-TA3-T	UG25N45L-TA3-T	UG25N45G-TA3-T	TO-220	G	C	E	Tube

UG25N45L-TA3-T (1)Packing Type (2)Package Type (3)Lead Plating	(1) T: Tube (2) TA3: TO-220 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage	V_{CEO}	450	V
Gate-Emitter Voltage	V_{GEO}	±6	V
Pulsed Gate-Emitter Current	I_{GEP}	±8	A
Pulsed Collector Current	I_{CP}	150	A
Power Dissipation @ T_C=25°C	P_D	2.5	W
Junction Temperature	T_J	+150	°C
Operating Temperature	T_{OPR}	-55 ~ +150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

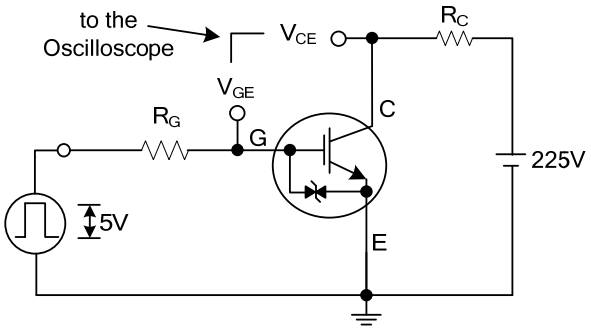
■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ_{JA}			50	℃/W

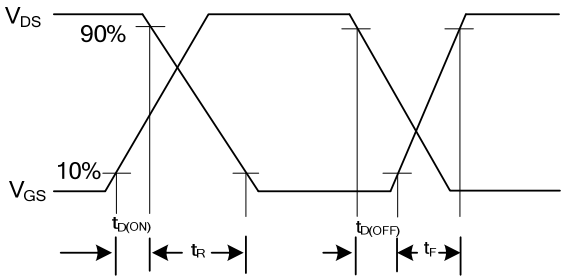
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	V_{GE}=4.5V, I_{CP}=150A (Pulsed)		6	8	V
Collector-Emitter Leakage Current	I_{CES}	V_{CE}=450V, V_{GE}=0 V			10	uA
Gate-Emitter Leakage Current	I_{GES}	V_{GE}=±6V, V_{CE}=0V			10	
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GE(TH)}$	V_{CE}=V_{GE}, I_C=250uA	0.35		1.2	V
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{IES}	V_{GE}=0V, V_{CE}=25V, f=1.0MHz		2227		pF
Output Capacitance	C_{OES}			200		pF
Reverse Transfer Capacitance	C_{RES}			79		pF
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{D(ON)}$	V_{CC}=225V, I_C =50A, R_G=25Ω, V_{GE}=10V		11.5		ns
Turn-On Rise Time	t_R			24.5		ns
Turn-Off Delay Time	$t_{D(OFF)}$			150		ns
Turn-Off Fall Time	t_F			3.3		ns
Total Gate Charge	Q_G	V_{CE}=360V, V_{GE}=4.5V, I_C=50A		64.5		nC
Gate-Emitter Charge	Q_{GE}			7		nC
Gate-Collector Charge	Q_{GC}			30		nC

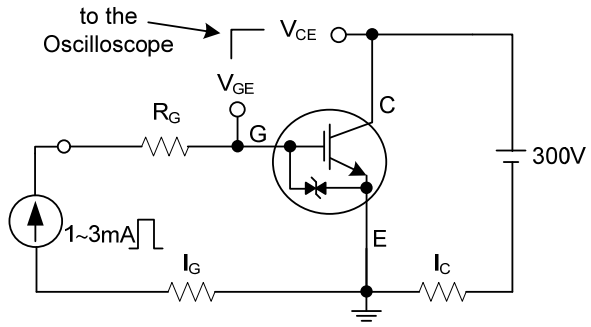
■ TYPICAL CHARACTERISTICS



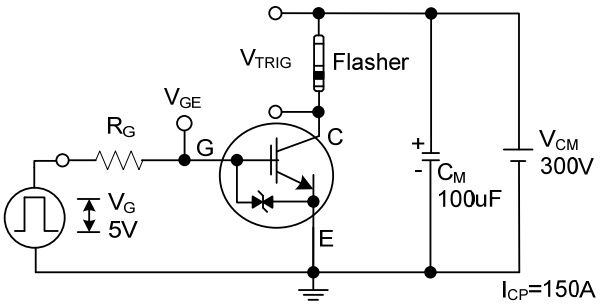
Switching Test Circuit



Switching Waveforms



Gate Charge Test Circuit



Application Test Circuit